

NORFOLK HARBOR NAVIGATION IMPROVEMENTS

THE PORT OF VIRGINIA

CONNECTING THE COMMONWEALTH
TO THE GLOBAL MARKET

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Director, Engineering
October 18, 2018



Stewards of Tomorrow



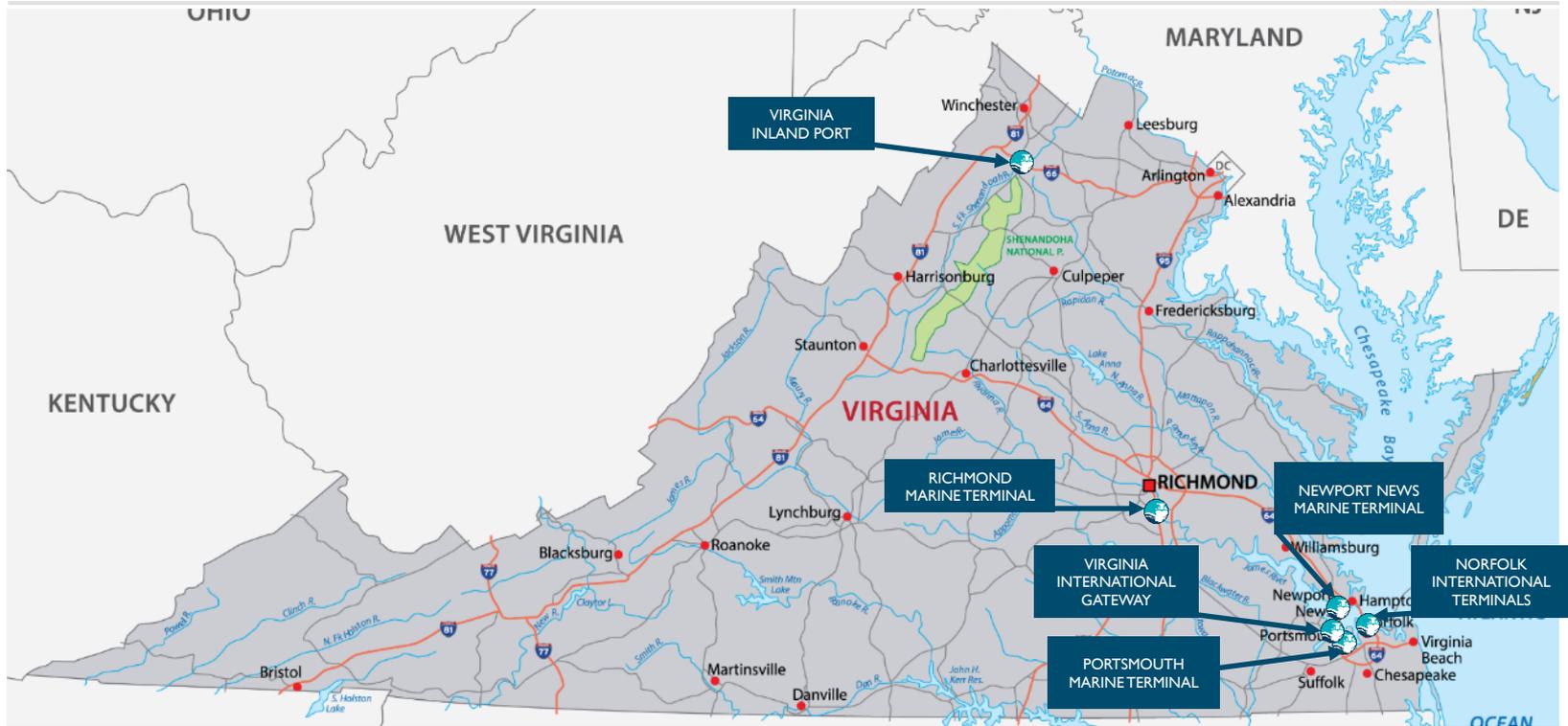
The Port Of Virginia Is A Gateway For Global Commerce



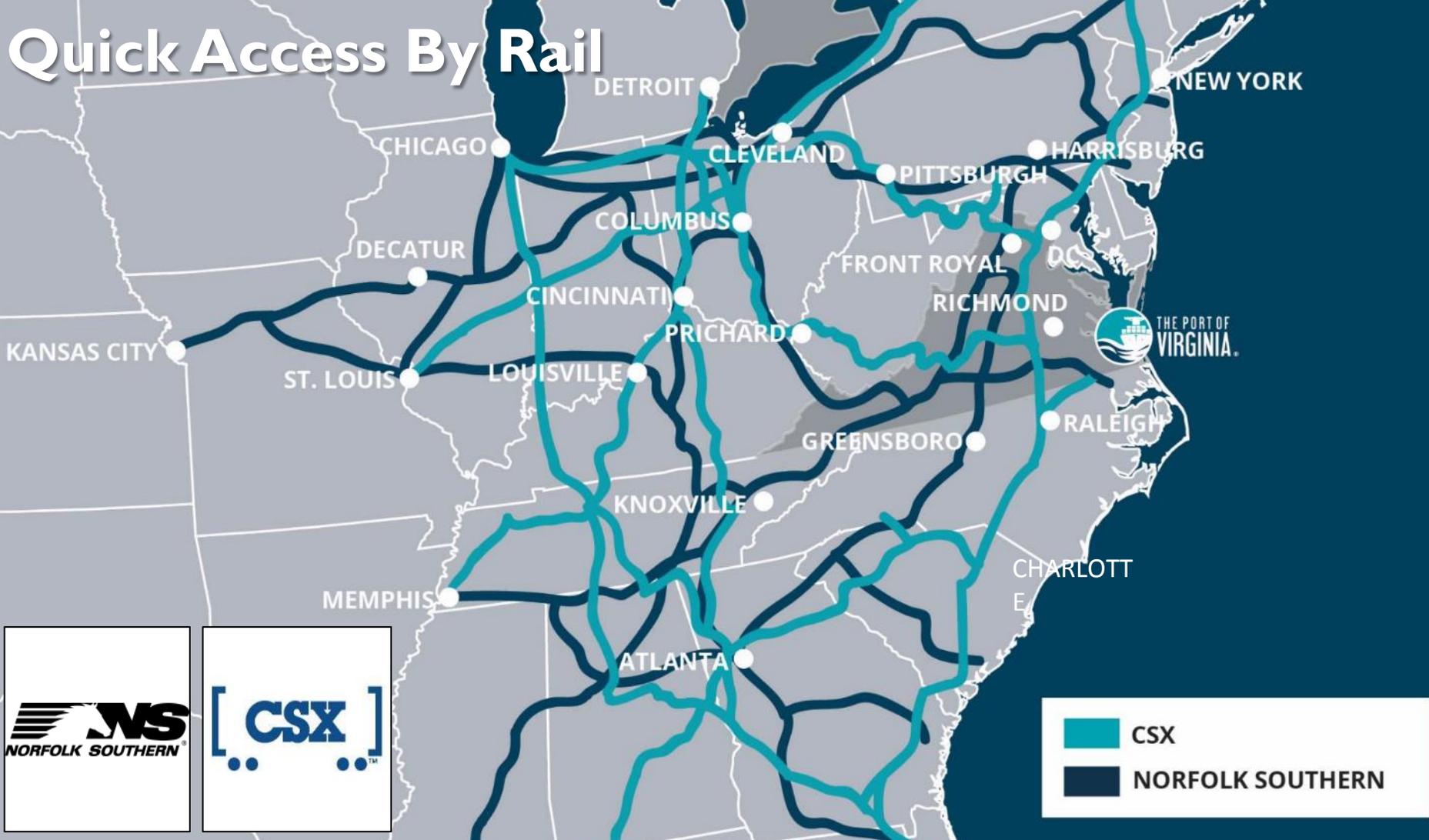
Port of Virginia



Port Of Virginia Terminal Locations



Quick Access By Rail



 CSX

 NORFOLK SOUTHERN

MARKET SIZE/PORT POSITIONING



The Port's location and primary market size positions us perfectly to serve the American Heartland.

Source: Colliers, population categories defined by R K Johns

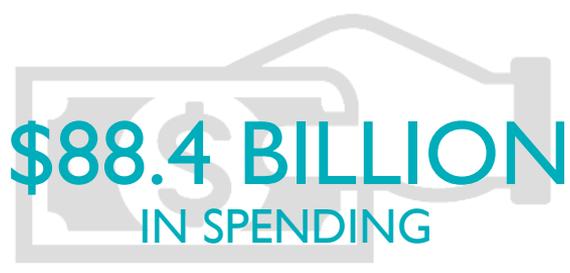
The Port's Contribution to the Container Shipping Industry



79,000,000
TONS OF CARGO MOVED



530,800
JOBS IN VIRGINIA



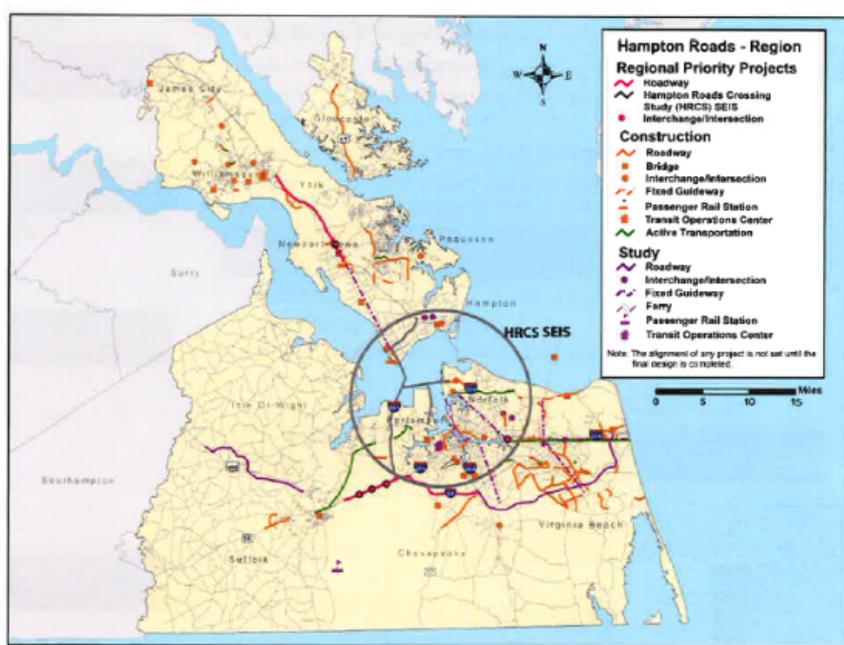
\$88.4 BILLION
IN SPENDING



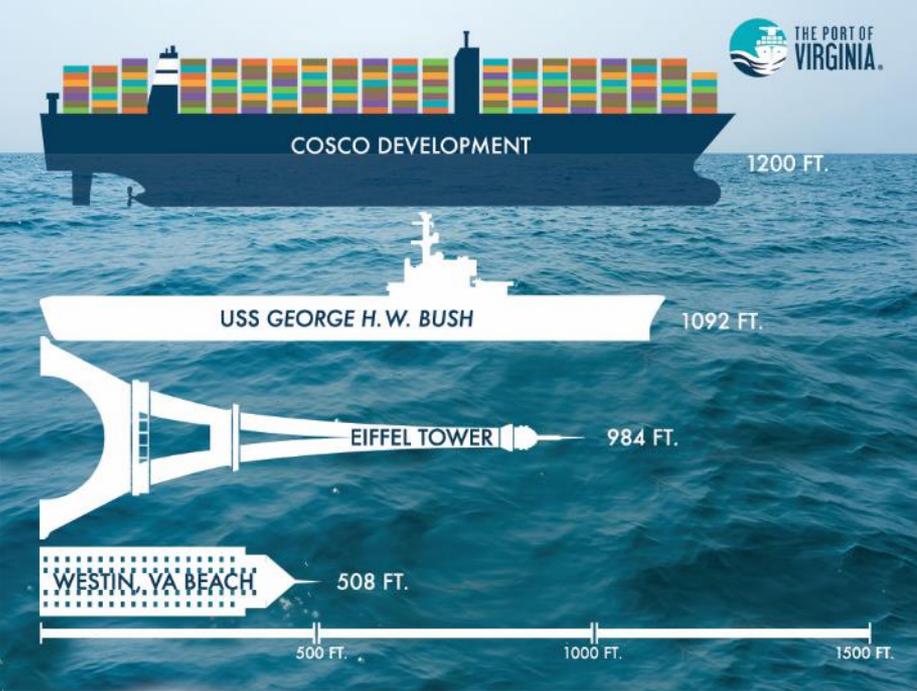
10.1%
OF VA GSP

Source: *Economic Impacts of Virginia's Maritime Industry, 2013*, Raymond A. Mason School of Business, William & Mary

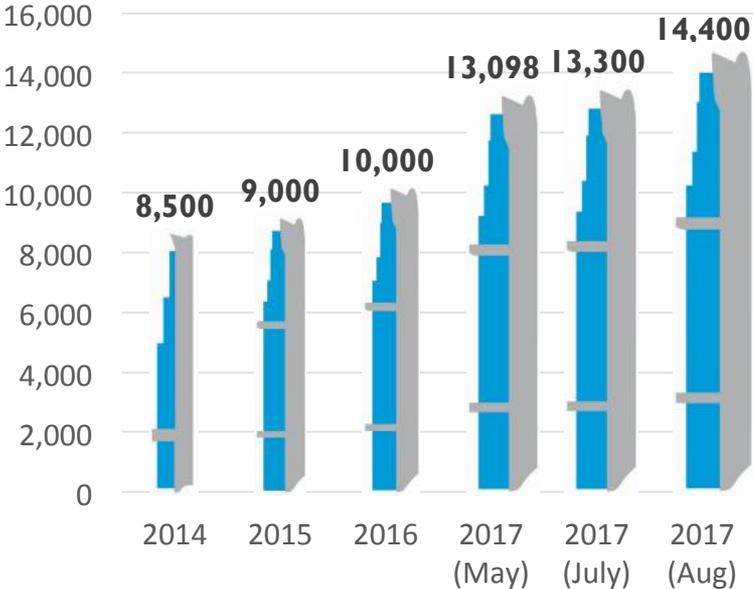
Over \$4 Billion Being Invested



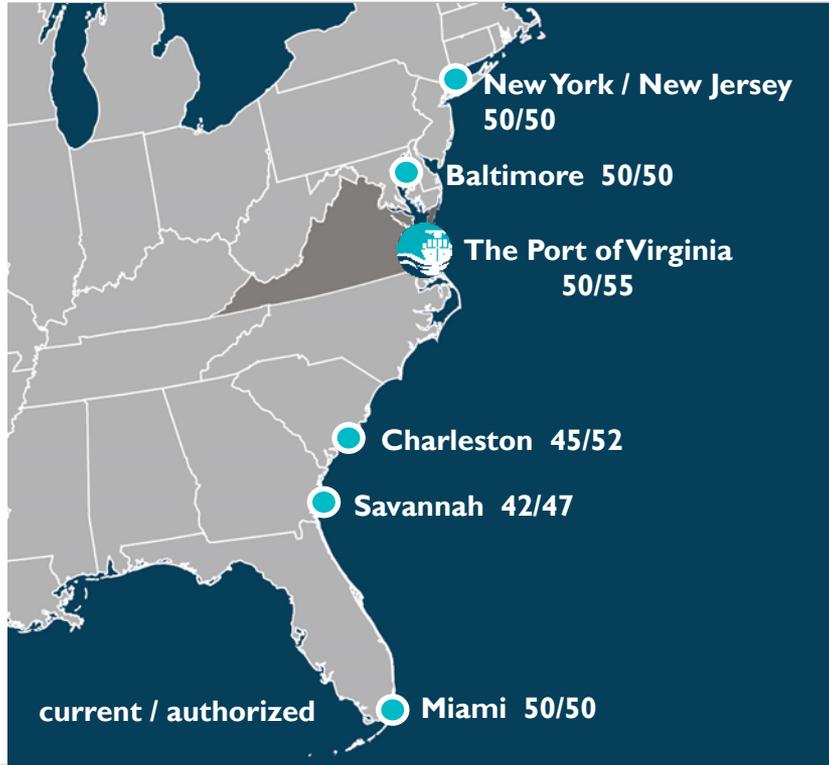
A History Of Welcoming Big Ships



Vessel Capacity (TEUs)



East Coast Port Depths



New York/New Jersey - 50' deepening completed September 2016

- \$2.1B total cost (roughly 54% federal/46% local cost share)
- Bayonne Bridge lift from 151' to 215' completed June 2017
- \$1.3B total cost

Baltimore - Constructed to 50'

- LRR underway to consider widening

Charleston - 52' authorized in WIIN 2016

- \$494M total cost (\$224M federal/\$269M local)
- SC appropriated \$300M in 2012
- Approvals complete. \$17.5M included in USACE FY17 and \$49M in FY18 Work Plans for construction.
- Construction began March 2018

Savannah - 47' authorized in WRRDA 2014

- \$973M total cost (roughly 60% federal /40% state)
- GA appropriated \$266M through bonds
- Outer harbor construction began in 2015 and scheduled through 2018

Miami - 50' deepening complete in September 2015

- \$220M total cost (\$112M FL/\$108 Miami-Dade)

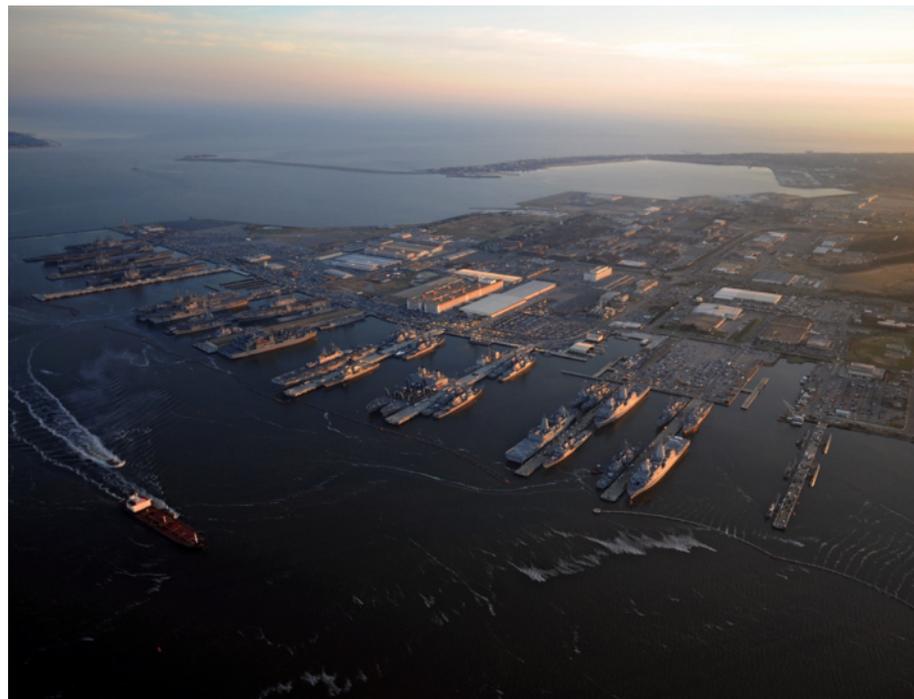
Big Ship Calls

- First 13k TEU vessel arrived May 2017 followed by first 14k+ TEU vessel in August 2017.
- Port now receives about 3 ultra large container vessels (ULCVs) per week.
- Special navigation rules implemented to manage traffic
- Unable to maximize cargo capacity due to draft constraints



Vessel Delays

- One ultra-large container vessel at a time in channel – one-way traffic
- Large Navy or ultra-large ships close channel to all other traffic
- Daily event (~6 times per week)
- Vessels queue for their turn or wait at dock
- Will become even more frequent in near future as more large vessels call at Norfolk



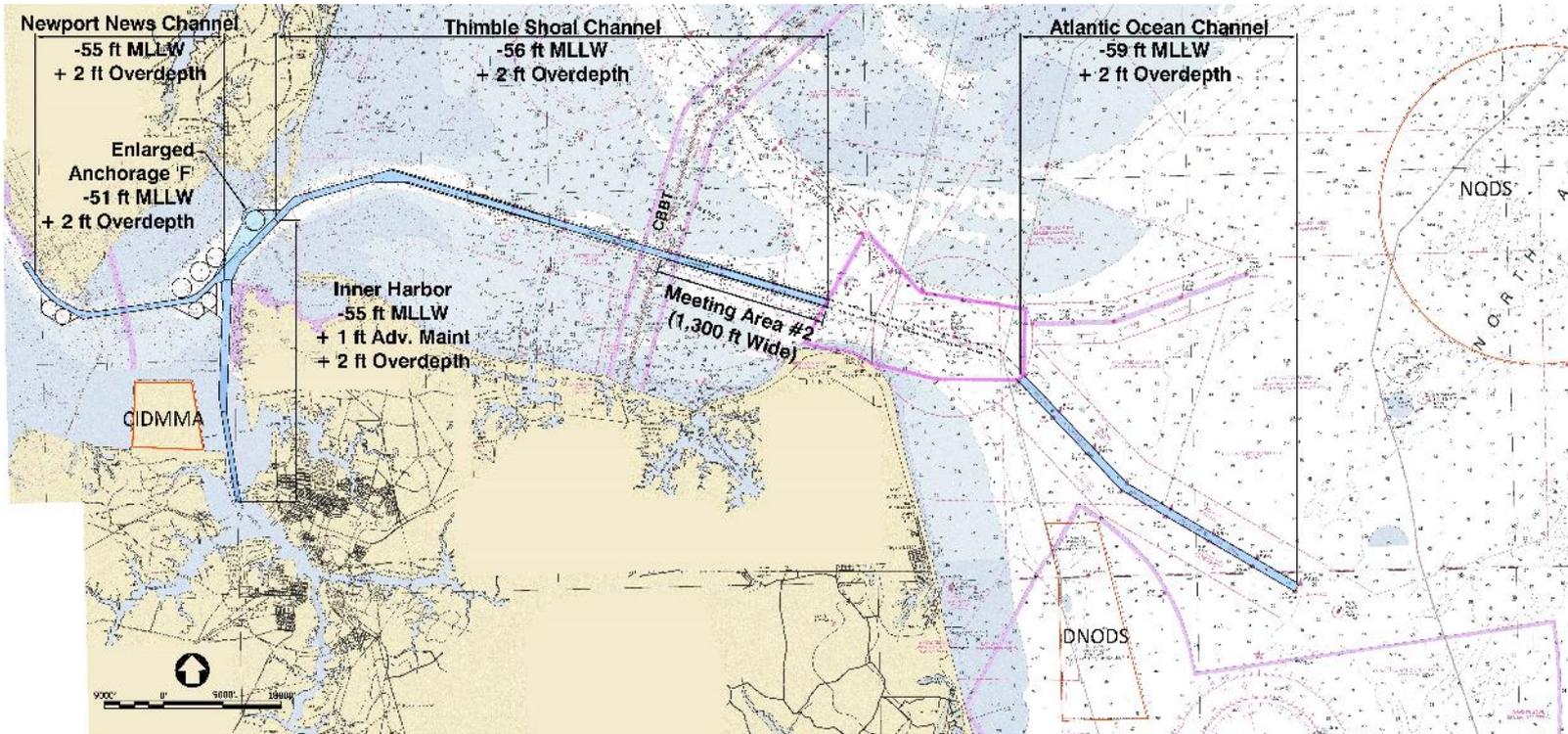
Norfolk Harbor Navigation Improvements

- Completed the GRR 6 Months Ahead of Schedule
- Chief's Report Signed (June 2018)
- Preconstruction Engineering and Design (PED) has Started
- Accelerated Construction Start - Response to Industry Needs

STRONGLY ENDORSE
THIS CRITICAL PROJECT -
GREAT PROJECT FOR "ENERGIZING
THE ECONOMY" AND PROTECTING
MARITIME RES'RS - WHILE PROTECTING
THE ENVIRONMENT!! STANDING
BY TO BEGIN CONSTRUCTION!!
REPORT IS 6 MONTHS AHEAD OF
SCHEDULE -

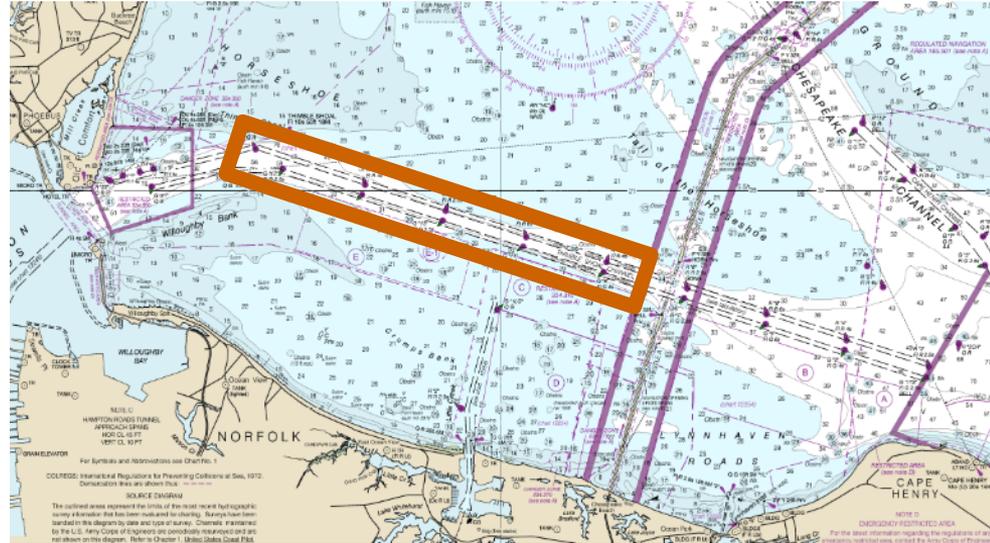

TODD T. SEMONITE
Lieutenant General, USA
Chief of Engineers

Chief's Report/NED Plan

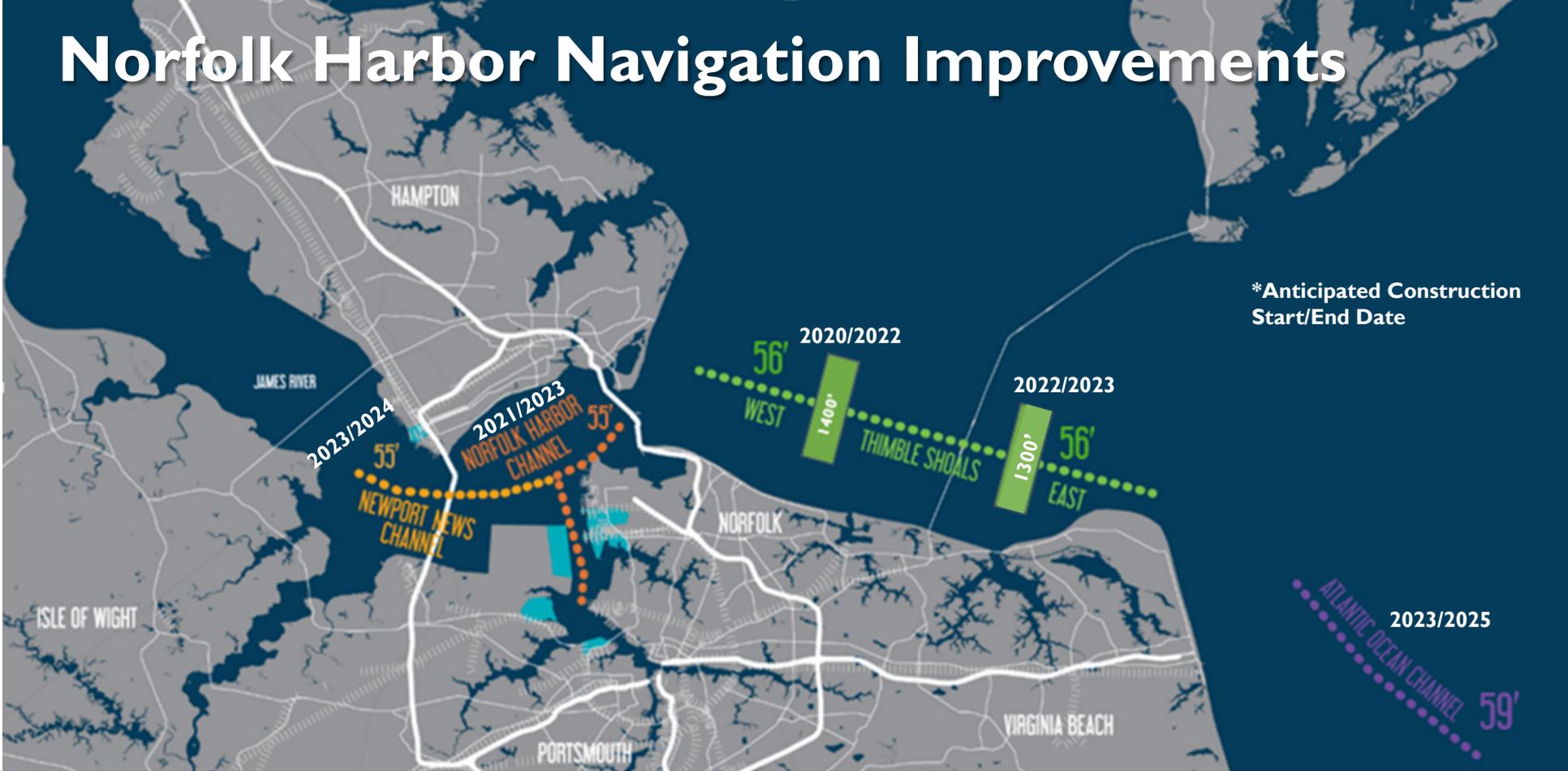


Project Phasing - Accelerated Execution

- Start Construction with Thimble Shoal Channel – West of the CBBT
- Opportunity for Beneficial Use of Sandier Material from TSC East and AOC
- Additional Time for CIDMMA Readiness

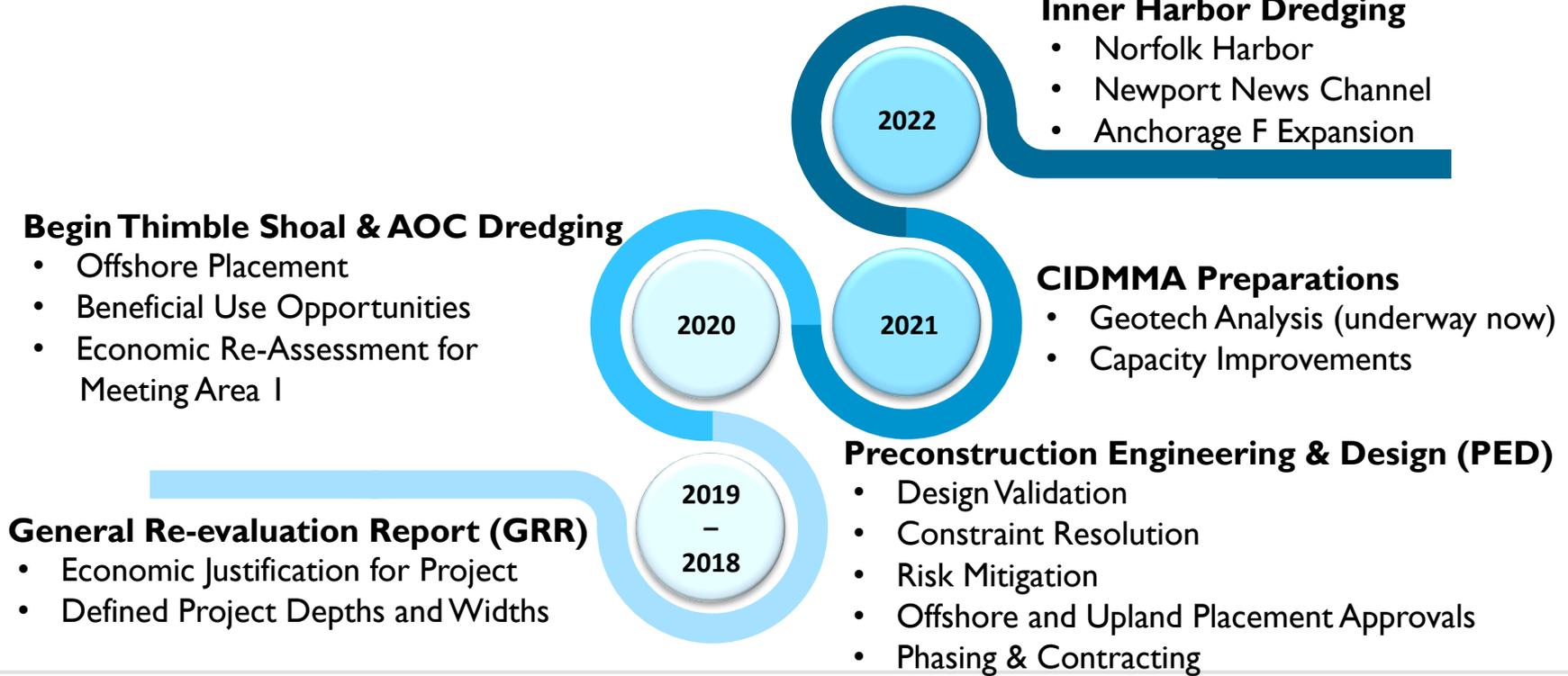


Norfolk Harbor Navigation Improvements



Path to Construction

Continued partnership with Norfolk District to move the project forward to construction



Design Validation (Ship Simulations)

- In progress
- Verifies Project Layout and Channel Meeting Areas



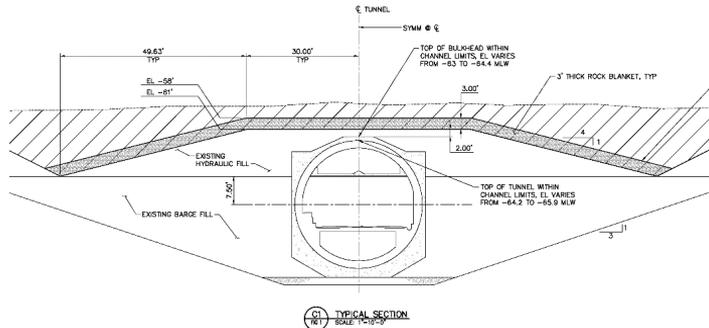
Figure: Underwater Camera View of Simulated Ship



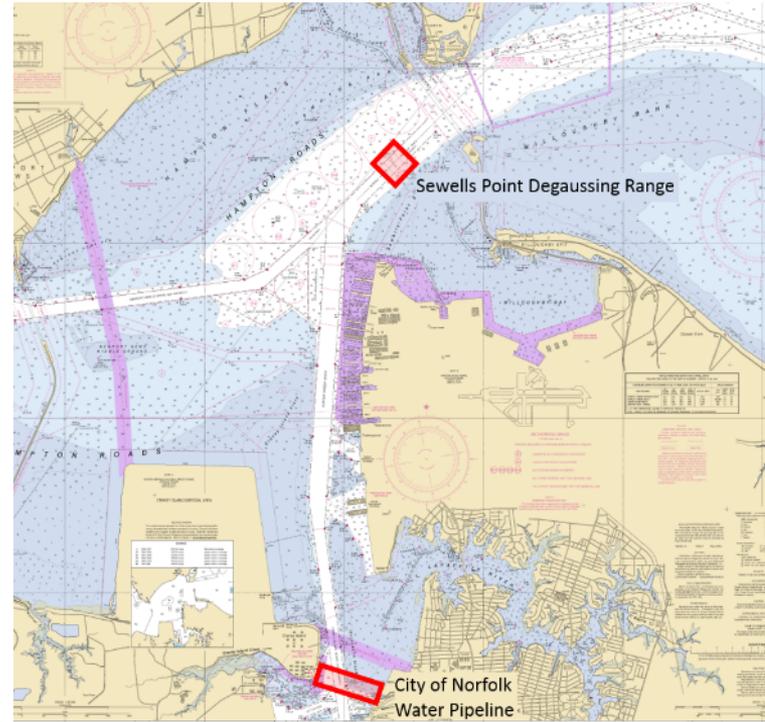
Figure: Full-mission ship simulator at MITAGS

Constraint Resolution

- Utility Surveys
- CBBT Cover Modification
 - Analysis Ongoing to Validate GRR Concept



Concept from GRR



Risk Mitigation

- Cultural Resource Surveys Ongoing, Started 9/27
- UXO Mitigation

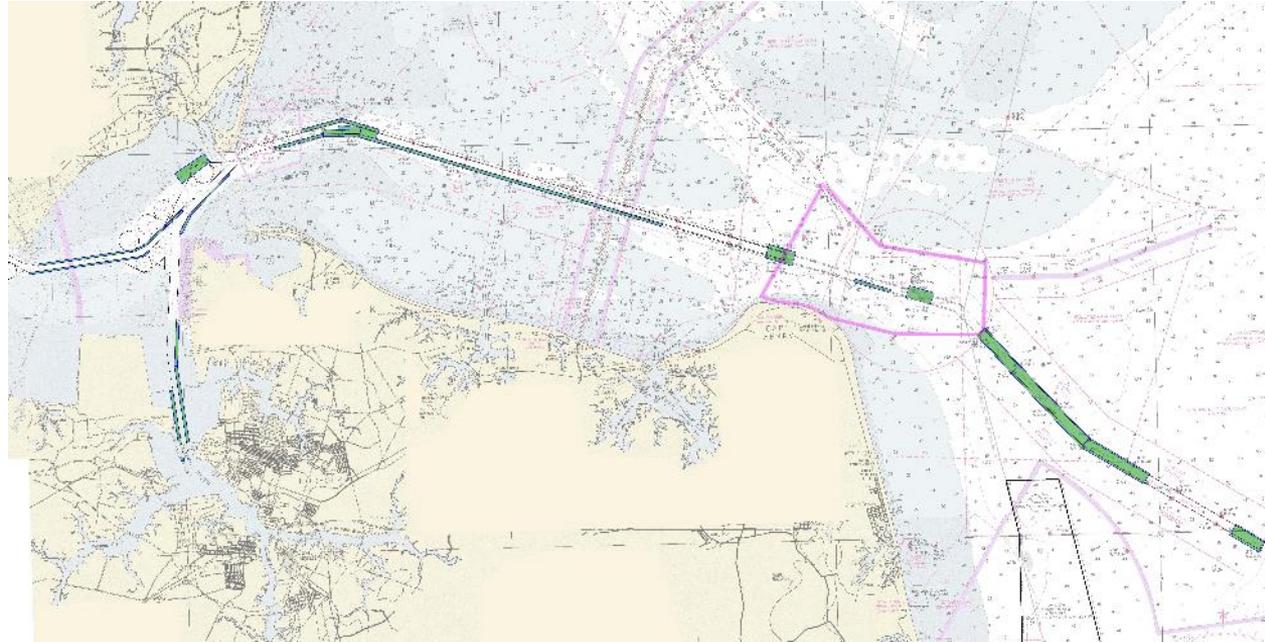


Figure: Comparison of survey areas w/ dredge limits

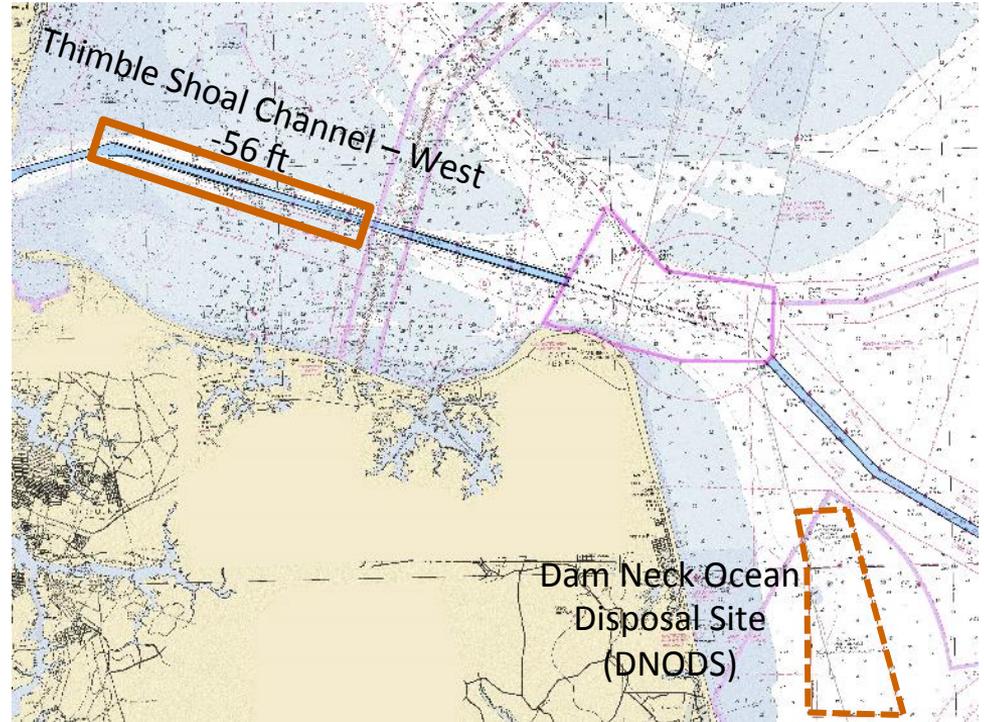
Offshore Placement Approvals

- EPA Approval Needed for Offshore Placement
- TSC-West Sampling Scheduled for 10/25/18 to 11/16/18
- M/V Northstar
Commander



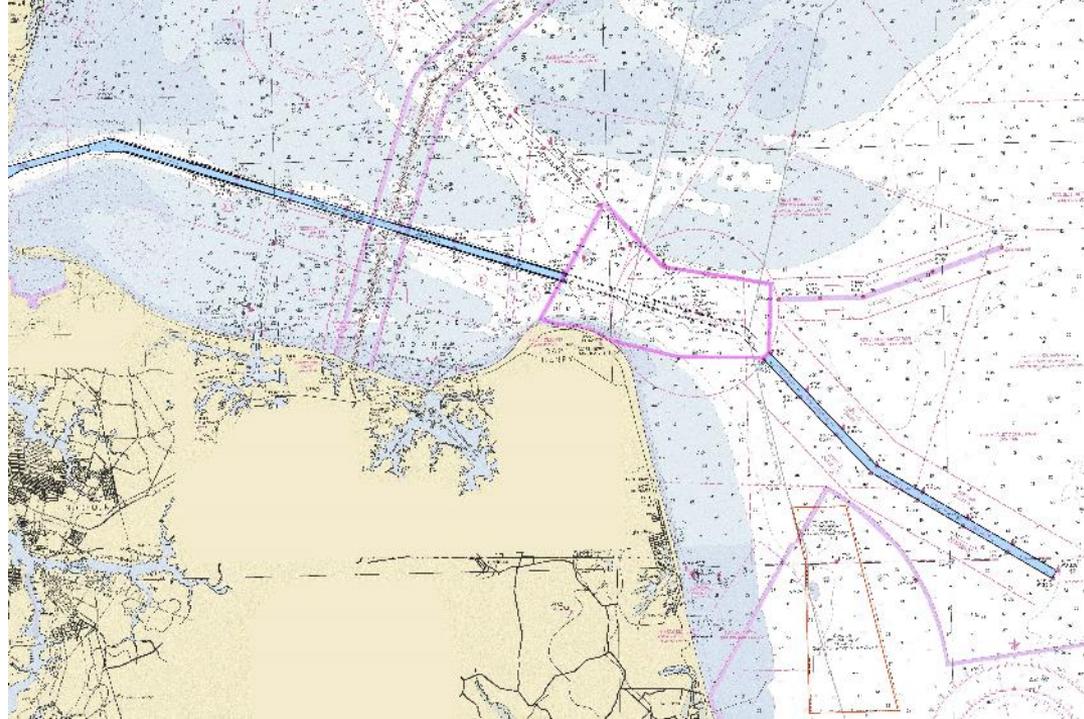
First Contract

- Thimble Shoal Channel, West of CBBT
- ~6.7MCY (Req + Pay OD)
- Advertise Summer 2019
- Award/NTP Fall 2019
- Start by January 2020



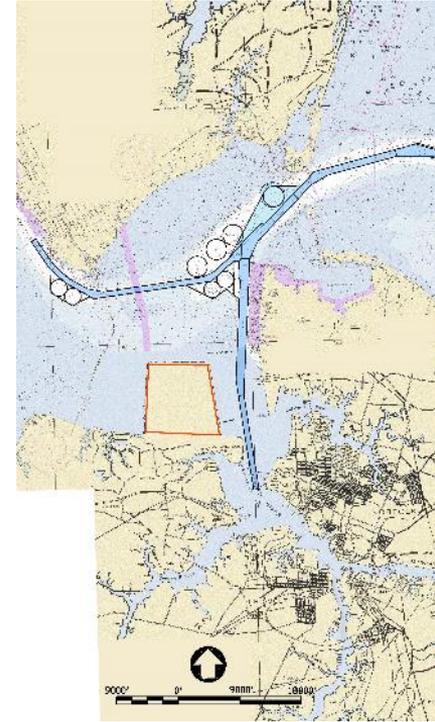
Subsequent Contracts – Ocean Channels

- Thimble Shoal Channel, East of CBBT
- Atlantic Ocean Channel
- Meeting Area 2
- ~10MCY Total



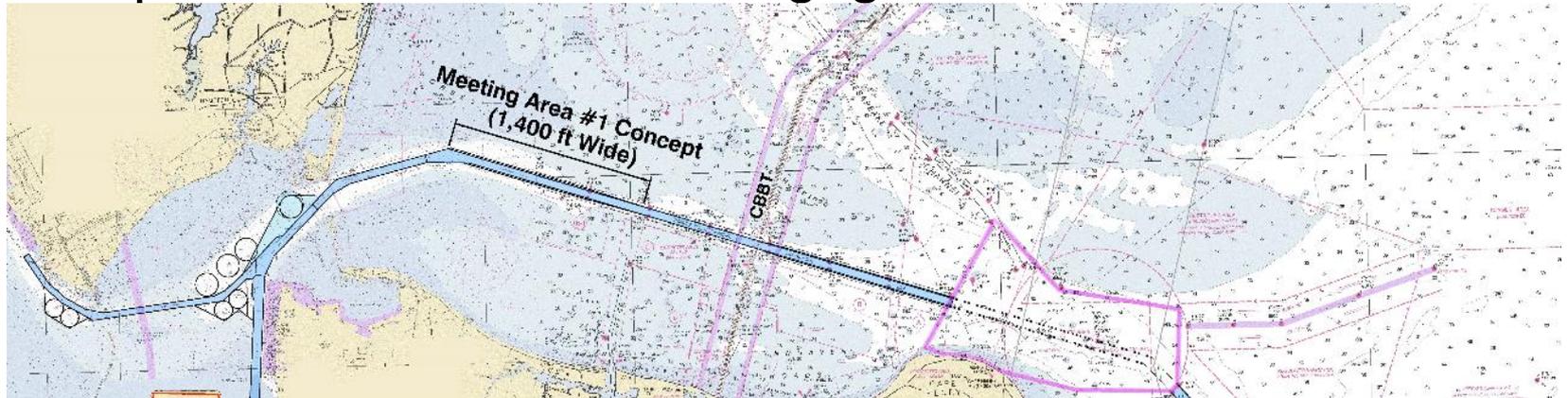
Subsequent Contracts – Inner Harbor

- Est. Start 2021 when CIDMMA ready
- ~10 MCY Total



LRR – Meeting Area #1

- Meeting Area #1 Width (West of CBBT) to be Confirmed via a Limited Re-evaluation Report
- Up to ~5 MCY additional dredging



SUMMARY – Near Term

- PED Tasks Ongoing to Support Spring 2019 Review Process of First Contract
- First Construction Element, TSC-West
 - Advertise Summer 2019
 - Start Jan 2020



SUMMARY – Long Term

- CIDMMA Readiness
- Beneficial Use of Sands – Continue Coordination Effort
- Continue Dredging



Craney Island Eastward Expansion

Purpose

- Increase Capacity of CIDMMA
- Provide Site for State Port



CIEE - Continued Effort for SE Cell

Cross Dikes:

- Raised dikes back to +7 Ft
- Completed: March 2018



CIEE - Continued Effort for SE Cell

Main Dike:

- Initial Pre-Dredging for Main Dike
- Upper Several Feet/Debris



CIEE - Continue Main Dike Pre-Drege

- Pre-Dredge of SE Cell Main Dike
- Debris removal
- Upper 10 feet pump into CIDMMA
- Below 10 feet ocean placement with EPA concurrence



CIEE SE Cell: Est. 5-10 years



Phase 1: SE Cell Fill & Ground Improvements

Mitigation Projects

Tracks with CIEE

Construction

- CIEE Mitigation: ~17% Complete
- CIEE Construction: ~10% Complete



CIEE Next Steps

- Continue Pre-dredge along Main Dike
- Continue effort to enclose SE Cell